

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-111. (cancelled)

112. (currently amended) ~~An substantially two-dimensional array comprising single-wall carbon nanotubes aggregated in substantially parallel orientation.~~

113. (previously presented) The array of claim 112 wherein the single-wall carbon nanotubes comprise a group of single-wall carbon nanotubes having a homogeneous characteristic selected from the group consisting of lengths, diameters, helicities and combinations thereof.

114. (previously presented) The array of claim 112 wherein the single-wall carbon nanotubes form a monolayer extending in a direction substantially perpendicular to the orientation of the single-wall carbon nanotubes.

115. (previously presented) The array of claim 113 wherein the single-wall carbon nanotubes form a monolayer extending in a direction substantially perpendicular to the orientation of the single-wall carbon nanotubes.

116. (previously presented) The array of claim 112 wherein the single-wall carbon nanotubes have lengths in the range between about 5 and about 1000 nm.

117. (previously presented) The array of claim 113 wherein the single-wall carbon nanotubes have lengths in the range between about 5 and about 1000 nm.

118. (previously presented) The array of claim 114 wherein the single-wall carbon nanotubes have lengths in the range between about 5 and about 1000 nm.

119. (previously presented) The array of claim 115 wherein the single-wall carbon nanotubes have lengths in the range between about 5 and about 1000 nm.

120. (previously presented) The array of claim 112 comprising single-wall carbon nanotubes with at least one substituent bonded at at least one end of the single-wall carbon nanotubes.

121. (previously presented) The array of claim 112 comprising endohedrally modified single-wall carbon nanotubes.

122. (previously presented) The array of claim 112 wherein the single-wall carbon nanotubes are predominantly of (n,n) type.

123. (previously presented) The array of claim 112 wherein the single-wall carbon nanotubes are predominantly of (m,n) type, wherein m is not equal to n.

124. (previously presented) A substantially two-dimensional array comprising single-wall carbon nanotubes aggregated in substantially parallel orientation, wherein the single-wall carbon nanotubes are attached to a substrate.

125. (previously presented) A substantially two-dimensional array comprising single-wall carbon nanotubes aggregated in substantially parallel orientation, wherein at least one substituent at at least one end of the single-wall carbon nanotubes interact chemically with a substrate.

126. (previously presented) The array of claim 124 comprising single-wall carbon nanotubes having a homogeneous characteristic selected from the group consisting of lengths, diameters, helicities and combinations thereof.

127. (previously presented) The array of claim 124 comprising single-wall carbon nanotubes aggregated in substantially parallel orientation, wherein the substantially parallel oriented single-wall carbon nanotubes form a monolayer on the substrate.

128. (previously presented) The array of claim 126 comprising single-wall nanotubes aggregated in substantially parallel orientation, wherein the substantially parallel oriented single-wall carbon nanotubes form a monolayer on the substrate.

129. (previously presented) The array of claim 124 comprising single-wall carbon nanotubes having lengths in the range between about 5 and about 1000 nm.

130. (previously presented) The array of claim 126 comprising single-wall carbon nanotubes having lengths in the range between about 5 and about 1000 nm.

131. (previously presented) The array of claim 127 comprising single-wall carbon nanotubes having lengths in the range between about 5 and about 1000 nm.

132. (previously presented) The array of claim 128 comprising single-wall carbon nanotubes having lengths in the range between about 5 and about 1000 nm.

133. (previously presented) The array of claim 124 comprising endohedrally modified single-wall carbon nanotubes.

134. (currently amended) The array of claim 124 A substantially two-dimensional array comprising single-wall carbon nanotubes aggregated in substantially parallel orientation, wherein the single-wall carbon nanotubes are attached to a substrate, wherein the substrate comprises a metal selected from the group consisting of gold, mercury and indium-tin-oxide.

135. (previously presented) The array of claim 125 wherein the substituent is a moiety selected from the group consisting of -S-, -S-(CH₂)_n -NH- and -SiO₃(CH₂)₃NH-.

136. (previously presented) The array of claim 124 wherein the single-wall carbon nanotubes are predominantly of (n,n) type.

137. (previously presented) The array of claim 124 wherein the single-wall carbon nanotubes are predominantly of (m,n) type, wherein m is not equal to n.

138. (previously presented) The array of made by the process of:

- a) masking a first portion of a substrate, wherein the substrate has a first unmasked portion;
- b) binding a first plurality of single-wall carbon nanotubes to the first unmasked portion of the substrate using a first linking moiety;
- c) removing the mask from the first portion of the substrate;
- d) masking a second portion of the substrate, wherein the substrate has a second unmasked portion; and
- e) binding a second plurality of single-wall carbon nanotubes to the second unmasked portion of the substrate using a moiety selected from the group consisting of the first linking moiety and a second linking moiety.

139. (previously presented) The array of claim 138 wherein the first plurality is a predominately different type of single-wall carbon nanotubes from the second plurality.

140. (previously presented) The array of claim 138 further made wherein:

- a) the first plurality has a first homogeneous characteristic selected from the group consisting of lengths, diameters, helicities and combinations thereof;
- b) the second plurality has a second homogeneous characteristic selected from the group consisting of lengths, diameters, helicities and combinations thereof; and
- c) the first homogeneous characteristic is different than the second homogeneous characteristic.

141. (new) The array of claim 124 wherein the substrate comprises a metal selected from the group consisting of gold, mercury and indium-tin-oxide.